WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

The Geoduck Program

Managing a Valuable Natural Resource for Washington Citizens

At statehood, Washington State gained title to aquatic lands: shorelands, tidelands, harbor areas, and beds of navigable waters. These are managed as a "public trust" for the benefit of all current and future citizens of the state. All lands below extreme low tide, and the resources embedded in them, including shellfish, are owned by the state and managed by the Washington Department of Natural Resources (DNR). The geoduck clam is among the most commercially valuable of these resources.

The Geoduck Clam

The geoduck (*Panopea abrupta*) is the largest bivalve in North America, and one of the world's largest clams. The record for the largest geoduck is 14 pounds and the average weight is two pounds. Geoducks are found along the Pacific Coast from California to Alaska; but quantities sufficient for commercial harvest are found primarily in the inland waters of Washington, British Columbia, and Alaska.

Geoducks reach maturity between three and five years of age. Analysis of growth lines on shells shows the oldest known geoducks to be more than 165 years old. Since the geoduck's siphon and body at maturity are too big to fit inside the shell, it digs into the bottom sediments (sand, mud, and gravel) for protection.

Commercial Geoduck Industry

During the 1950s, U. S. Navy divers in Puget Sound observed vast populations of sub-tidal geoducks throughout the region. At that time, there was no commercial geoduck fishery. During low tide, recreational harvesters would dig for the clams in sand and mud up to four feet deep.

In the 1960s, the agency that is now the Washington Department of Fish and Wildlife (WDFW) conducted sub-tidal surveys to determine if the geoduck resource could support commercial harvest. The geoduck resources were so vast that, in l969, DNR and WDFW jointly petitioned the Legislature to open the waters to commercial harvesting. The Legislature did so, and directed DNR and WDFW to manage the fishery cooperatively.

In 1970, the first harvesting contract was offered for sale. Demand was limited and the state received five to ten cents per pound. By the mid-1970s, demand grew significantly when the industry found a market for geoducks in Japan – for sushi.

Today, the state receives $4 to $6 per pound, with wholesale prices in the $10 to $14 per pound range.

Contact

Todd Palzer
Aquatic Resources
Shellfish Program Manager
1111 Washington St SE
PO Box 47027
Olympia, WA 98504-7027
phone 360-902-1864
fax 360/902-1786
Todd.Palzer@wadnr.gov

fs-04-176 printed 4/15/04

Goals for managing the Geoduck Program

DNR's goals for management of the state's geoduck program are to:

- Protect the geoduck resource and the marine environment
- Provide maximum benefits to the citizens of the state
- Minimize adverse impacts to shoreline residents
- Ensure effective enforcement
- Encourage a stable and orderly fishery

Commercial Harvesting Beds

Commercial geoduck harvest takes place in a clearly defined area – deeper than 18 feet (adjusted for tidal changes) but shallower than 70 feet. The inner harvest boundary helps to protect sensitive nearshore habitats, such as eelgrass beds and forage fish spawning areas. The outer boundary is the limit at which divers can effectively operate with limited bottom time and without extensive decompression.

Harvesting is limited to specific beds that contain quantities suitable for commercial harvest, and which are certified by the state Department of Health (DOH) as meeting state and national sanitary requirements. According to WDFW estimates, the total geoduck biomass in Washington could be 674 million pounds. Of the total, an estimated 163 million pounds are currently available for commercial harvest. To ensure the fishery sustainability, the total annual commercial harvest is limited to 2.7 percent (about 4 million pounds) of the total surveyed commercial biomass within harvest boundaries.

As a result of a 1994 federal court ruling, the total annual commercial harvest is shared equally by the state and treaty tribes. Although the state and tribes develop annual harvest plans that provide a cooperative process to manage the commercial geoduck fishery, their enforcement responsibilities are separate. DNR works with tribes, upon their request, to assist them in development of good management and enforcement practices.

Beds to be harvested are selected by DNR from those that have been designated as harvestable by WDFW, and certified by DOH. Many otherwise pristine areas cannot be harvested because of non-point pollution that seeps into the waters from such sources as septic systems, roads, and storm drains.

In 1999, 47.8 million pounds of geoducks were considered unharvestable due to point and non-point septic contamination. This represents roughly 22 percent of the surveyed biomass in the state, and includes extensive geoduck tracts along the eastern shore of Puget Sound between Tacoma and Everett.

DNR selects geoduck beds based on a variety of criteria, such as: size, location, weather, and geoduck density. Beds are selected for harvest in a limited geographic area to allow DNR enforcement staff to monitor all harvest operations. This also allows DNR and WDFW personnel to concentrate efforts on surveying geoduck tracts and working with local residents, local government, and treaty tribes.

By law, only individuals holding a harvest agreement with DNR may commercially harvest geoducks from state aquatic lands. The contract clearly identifies the time, location, number of pounds (quota) and equipment that can be used by the harvesters. It also requires the harvesters to provide and maintain an updated plan of operations that

includes information such as the identity of all people and vessels working under the contract.

Program Implementation

As the commercial geoduck industry has grown into a multi-million dollar enterprise, DNR's oversight capabilities have expanded to meet the program's responsibilities.

The DNR Geoduck Program is comprised of ten full time staff members in a combination of field and office positions. All full-time staff members function on both the Enforcement Team and the DNR Dive Team. The program has three fully commissioned DNR Enforcement Officers, seven DNR wardens, two certified Master Divers, and two certified diving instructors. All members of the dive team either have training or experience as commercial divers.

Combined, the members of the Geoduck Program bring 35 years of law enforcement experience, almost 200 years of diving experience, and 45 years of experience specific to the DNR Geoduck Program.

In the nine years since the program's expansion, the number of violations has decreased by 75 percent. Violators lose their harvest opportunity, face criminal and civil charges, and are liable for treble damages for theft, plus investigative costs. In 1999, DNR investigators uncovered the largest geoduck wastage violation in state history. As a result of the investigation, the violators made restitution to the fishery.

Enforcement of State Geoduck Harvests

The vessels of commercial geoduck harvesters must comply with strict noise, safety, and operating requirements. A DNR enforcement crew is present on the water during all state harvesting. The enforcement crew weighs all geoducks harvested under state contracts. Harvesting hours are weekdays, 8:30 a.m. to 4:30 p.m., adjusted seasonally to avoid working in the dark. Every individual aboard each harvester vessel is visually identified and recorded in the vessel logbook. Under the contract, all personnel must be listed on the harvester's plan of operations.

Vessel logbook entries – Every activity that occurs in the course of daily operation is logged, including harvest vessel staff, vessel locations and movements on the tract, wastage checks, and product weigh-outs.

Vessel locations – DNR enforcement officers record the locations of all harvest vessels throughout the harvest. No vessel may change location without notifying DNR enforcement officers. The DNR enforcement vessel typically follows the vessel to its new location.

Benefits to the State

The geoduck fishery provides resource protection, jobs, and revenue to the state and its economy.

Over the last 10 years, the geoduck program has generated $60 million through public auctions of harvest quotas.

Half the revenue pays for management and protection of state-owned aquatic lands and resources. The other half is placed in the Aquatic Lands Enhancement Account (ALEA), a dedicated fund created by the legislature in 1984 that is used to develop public access to aquatic lands, and restore native aquatic habitat.

Since 1984, the ALEA grant program has distributed more than $30 million for more than 200 local projects.

DNR geoduck Program staff dive onsite and use various monitoring equipment to make sure commercial harvesters comply with state regulations. Photo shows commercial harvester boat in Mutiny Bay off Whidbey Island.

Wastage check – Enforcement personnel use drop video surveillance, and dive onsite several times per month to make sure that the harvesters are complying with the terms of their contract, and to deter wastage. After a harvest vessel has left a harvest area, DNR enforcement staff checks the seafloor for signs of wastage.

Weigh-out and inspection – Geoducks harvested by each boat are weighed on the harvest vessel at the end of each day. The loads are inspected for quality of the geoducks that could indicate a pattern of wastage. DNR enforcement officers also inspect harvest vessels for unreported catch.

Equipment

Three vessels are dedicated to the program for enforcement and dive operations. Additional state vessels are available as needed. Enforcement staff use vessel radar and Differential Global Positioning Systems (DGPS) to locate each harvest vessel. Underwater drop video systems allow staff to view harvest locations.

Laser range finders with an accuracy of within six inches at a thousand feet ensure that harvest operations are within the allowed harvest area. Field staff use sound meters to check vessels. Divers use commercial surface-supplied air systems to obtain more bottom time and flexibility in conducting dive investigations.